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ABSTRACT

This policy brief reports on a study of variation in states' school completion rates for students with disabilities and the relationship of school completion to economic, sociodemographic, and educational variables. States' school completion rates were calculated from data maintained by the Department of Education. In addition, state-level special education personnel were interviewed in those states with relatively high and stable percentages of students with disabilities graduating. Graduation rates (either diploma or certificate) for this population ranged from .27 percent of the resident population in Arkansas to .47 percent in Virginia. Some states did not grant certificates, while others presented more certificates than diplomas to students with disabilities. Application of several predictive models identified predictors for all disabilities, for students with specific learning disabilities, for students with severe emotional disturbances, and for students with mental retardation. All three states' interviewees described cost-load leadership, a focus on school completion for students with disabilities, and implementation of specific initiatives related to completion. Findings support the following recommendations: first, base reform and change initiatives on a data-based information pool, and, second, refashion special education using emerging knowledge about relationships between economic, educational, and demographic variables and disability issues. Tables and graphs detail graduation rates and predictor variables by disability group and data on graduation by diploma or certificate. (Contains 12 references.) (DB)

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School Completion Rates for Children with Disabilities

A Project ALIGN Issue Brief November 1996

The Role of Economic and Demographic Factors

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School Completion Rates for Children with Disabilities

A Project ALIGN *Issue Brief* November 1996

The Role of Economic and Demographic Factors

The Importance of School Completion

As we design the service delivery systems for the 21st century, the overriding issue for children with disabilities is not access to opportunities or procedural guarantees, but how to achieve substantially better vocational and social-personal outcomes. In the last ten years, educators and the public have become much better informed about the unsatisfactory levels of employment, school completion, adult independence, and participation in postsecondary education for students with disabilities. Although school completion alone is not a sufficient indicator of long term successful adjustment, it must be regarded as important. Blackorby and Wagner (1996) reported recently regarding trends in employment in their follow along study of a national representative sample of youth with disabilities five years after leaving school:

> Completing secondary school appears to have paid off for high school graduates with disabilities. They showed a 12 percentage point increase over the 3-year period, whereas the gains among dropouts and agents . . . were not statistically significant. Three to five years after high school, graduates were significantly more likely to be employed than were peers who had either dropped out or aged out (p. 405).

In 1990, IDEA, as amended by P.L.101-476 mandated the provision of systematic In 1990, IDEA, as amended by P.L.101-476 mandated the provision of systematic transition planning and services to begin no later than age 16 for all youth with disabilities. The need to better understand and to influence school completion rates and increase the effectiveness of transition services is particularly important if individuals with disabilities are to participate effectively in the opportunities afforded by the School-to-Work Opportunity Act of 1994 (P.L. 103-239). States implementing the transition services mandate and related initiatives supported by the School to Work Opportunities Act or discretionary programs authorized under IDEA are connecting services for youth in the general population and programs for students with disabilities.

> Although much information is available regarding the importance of school completion, our understanding of the factors that influence school completion rates remains limited.

Although much information is available regarding the importance of school completion, our understanding of the factors that influence school completion rates remains limited. The research, practice, and policy discussions are often discordant and strident in tone. They are not easily presented as cohesive and persuasive accounts of effective responses to issues related to school completion for children with disabilities. The difficulties with such presentations have become even more apparent in the efforts to inform Congress and the public of key issues related to the reauthorization of IDEA. Public education systems are vulnerable to shifts in social, political, and economic factors over which they have no direct control. A broader context is needed to secure renewed public commitment to special education services. If the gains of the past two decades are

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to be preserved and built upon, we must extend our knowledge base regarding social forces that affect the implementation of special education and related legislation.

Researchers are increasingly interested in the incorporation of a broadening array of social and political factors that may influence special education outcomes. Investigators have begun to examine the relationships among child variables, school program characteristics, student/community demographic characteristics, socioeconomic variables and special education outcomes (Benz, Yovanoff, & Doren, 1997; Halpern, Yovanoff, Doren, & Benz, 1995; Heal & Rusch, 1995).

Such research illustrates the complexity of the relationships among sociocultural variables and educational outcomes. National research is often hindered, however, by the scope of the data collection and data management tasks; as a result, most of the studies have relied on local or regional samples, and did not include economic and demographic variables. The substantial amount of information collected annually regarding children with disabilities by the U.S. Office of Special Education Programs and the data amassed regularly by the National Center for Education Statistics about educational, economic, and social indicators for all of the nation's school districts is relatively untapped.

This Project Align *Issue Brief* reports on investigations of variation in states' school completion rates and the relationship of school completion to economic, sociodemographic, and educational variables. Descriptive profiles of state and national trends provide a picture of the school completion rates for all children with disabilities, and for students with Specific Learning Disabilities (SLD), Serious Emotional Disturbance (SED), and Mental Retardation (MR) separately. Subsequent analyses produced predictive models of the relationships among school completion rates and a number of economic, educational, and demographic variables. In addition, interviews were conducted with state department of education personnel in three states with relatively high rates of graduation for students with disabilities. These interviews were focused on states' experiences and practices regarding the enhancement of special education graduation rates.

> Graduation rates for children with disabilities ranged from .07 percent of the resident population in Arkansas to .47 percent in Virginia

Diplomas or Certificates?

States' 1992-93 school completion rates for children with disabilities were calculated from the national data set maintained by the U.S. Department of Education (U.S. Office of Special Education Programs) that is used to provide information about the status of the implementation of IDEA.

For the present study, we extracted from the data set the number of children, ages 14 and older, who were identified as students with disabilities in the public school system and who exited the educational system in 1992-93 in each of the 50 states and the District of Columbia. Because states were given the option of using the earlier system or a newly introduced system for reporting their exiting data, not all of the exit categories can be compared across states. As a result, we examined only "Graduated with diploma" and "Graduated with certificate," two categories that were defined the same in both reporting systems.

Overall, approximately 138,383 youth with disabilities left school with a diploma or a certificate during 1992-93. We chose to compute exit figures as a percent of the resident population to avoid distortions related to different identification rates. An accurate depiction of the school completion rate figures is "the percent of the resident population that was identified as students with X disability and that exited the system by Y means."

Graduation rates (diploma and certificate combined) for children with disabilities ranged considerably, from .07 percent of the resident population in Arkansas to .47 percent in Virginia (see Figure 1). Further, states varied widely in their use of diplomas and certificates. Some states (NJ, MA, RI) do not grant certificates while others (MS, AL, TX) present more certificates than diplomas to students with disabilities.

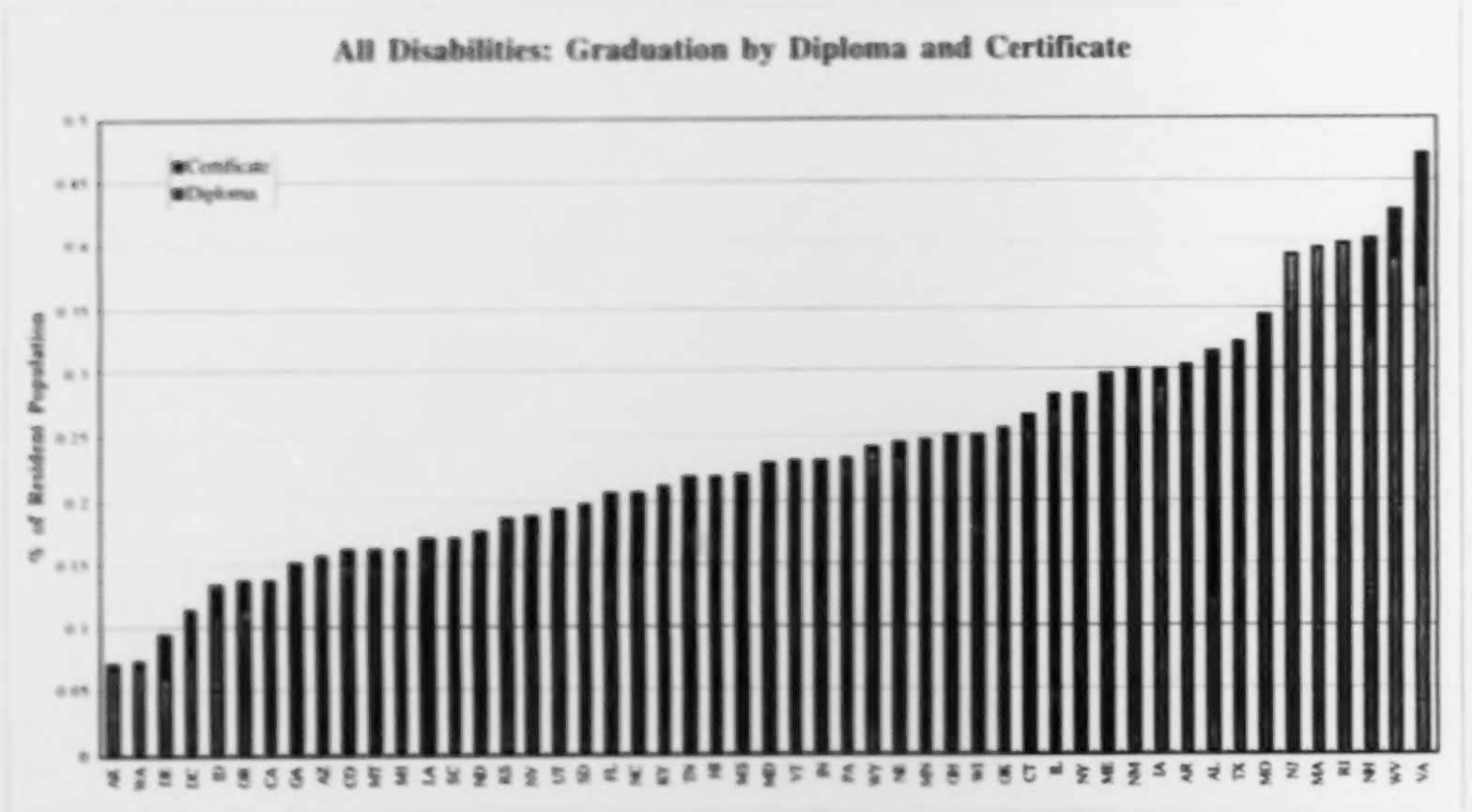

Figure 1
Graduation Rates for All Disabilities Combined

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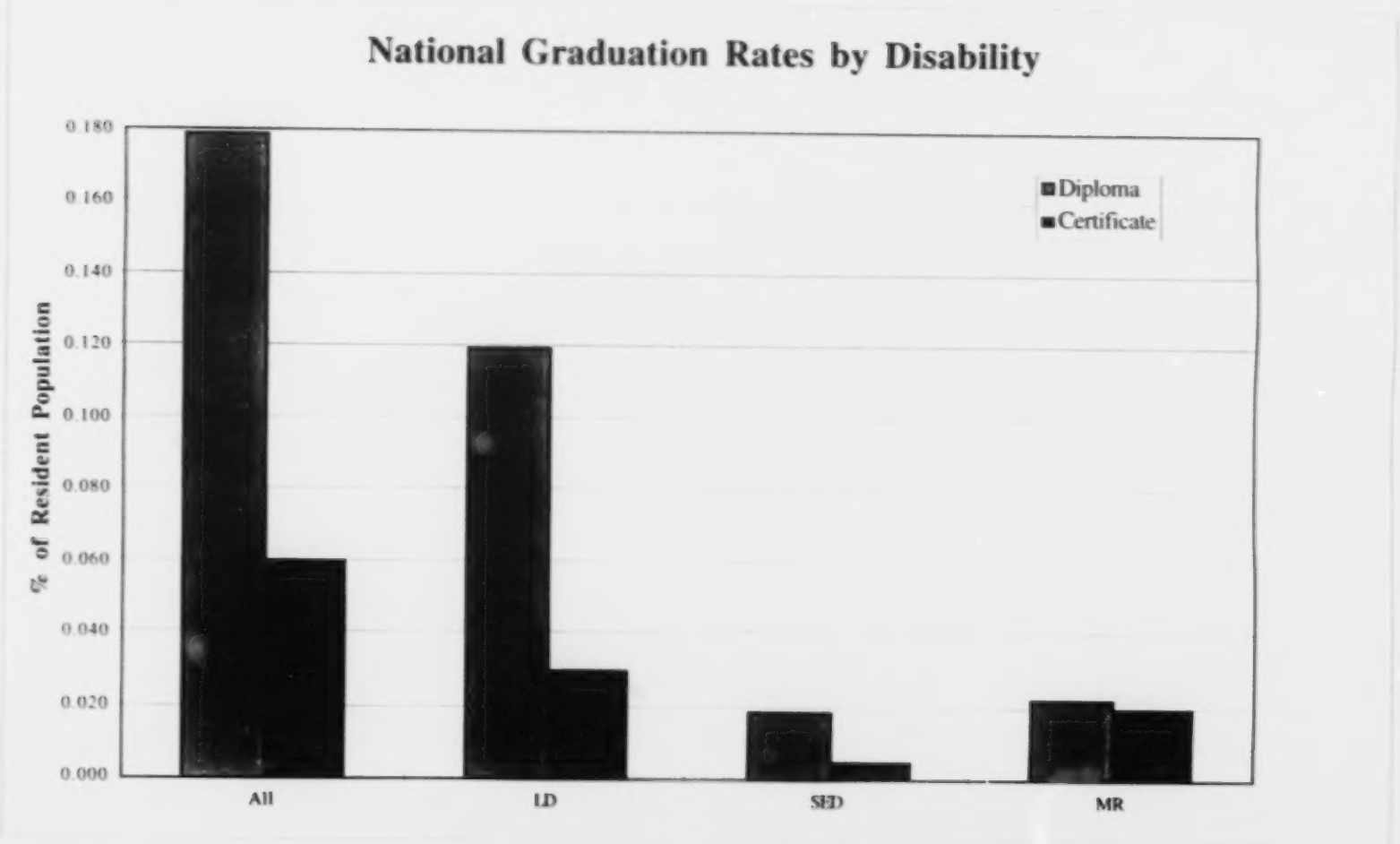

Figure 2
National Rates for Graduation by Diploma and Certificate

Table 1
Variables included in prediction models

- *Graduation / Diploma / Certificate rate* - the number of students identified as eligible for special education (with a particular disability) who exited school services with a diploma/certificate; divided by the state's resident population, ages 6-21 years.
- *4th grade reading proficiency* - State average for 4th grade NAEP reading proficiency scores
- *8th grade math proficiency* - State average for 8th grade NAEP math proficiency scores
- *Student-teacher ratio* - Ratio of students to teachers for state as a whole
- *Average teacher salary* - Mean of states' teachers' salaries
- *Percent (of school staff) that are aides* - Number of aides divided by total number of instructional and noninstructional staff
- *Chapter 1 funding* - Total amount of Chapter 1 program funding divided by school enrollment
- *Per pupil revenue* - Total amount of states' education revenue divided by school enrollment
- *Current expenditure per pupil* - States' current education expenditures divided by school enrollment
- *Percent revenue from local sources* - Percent of states' educational revenue that comes from local sources
- *Percent revenue from state sources* - Percent of states' educational revenue that comes from state sources
- *Percent revenue from federal sources* - Percent of states' educational revenue that comes from federal sources
- *Elem/Sec Ed. expenditures per capita* - States' expenditures on elementary and secondary education divided by population
- *Educational expenditures per capita* - States' expenditures on all education divided by population
- *Educational Expenditures as % of GSP* - States' expenditures on all education divided by the Gross State Product
- *Human Services expenditures per capita* - States' expenditures on all human services programs divided by population
- *Gross State Product per capita* - Gross State Product divided by population
- *Median household income (1990)* - Median income for all households in state
- *Percent of households earning < $25,000/yr* - Percent of households that report earning less than $25,000 per year
- *Per capita income* - Total personal income divided by population
- *Population density* - Number of persons per square mile
- *Community adult dropout rate* - States' dropout rate for adults
- *Percent white* - Percent of the population that is identified as White
- *Percent of households below poverty level (1992)* - Percent of households that report income below the poverty level
- *Community adult % unemployment* - Percent of adults that are classified unemployed

National figures for graduation by diploma and by certificate demonstrate clearly that diplomas are provided more frequently than certificates for all disability groups combined, for students with LD and for students with SED (see Figure 2). Students with MR receive diplomas and certificates in about equal proportions.

Predicting Graduation

The descriptive findings cited above make it clear that school completion by students with disabilities shows considerable variation across states. In an effort to understand the meaning of that variation, we created a set of predictive models that examined the relationship between these school completion variables and other relevant characteristics of states.

A set of educational, economic, and demographic variables was extracted from the National Center for Educational Statistics electronic catalog (NCES, 1992). The catalog is a collection of tables summarizing information relevant to education. The selection of variables that were judged relevant to school completion by children with disabilities were chosen for inclusion in the analyses was informed by previous related studies (Coutinho & Oswald, 1996; McLaughlin & Owings, 1992; Oswald & Coutinho, 1995, 1996).

Three types of variables were included in the models: education variables, demographic variables that characterized significant features of states and their populations, and economic variables that captured important aspects of states' fiscal circumstances. A detailed listing of the variables may be found in Table 1.

Predictive models were constructed using a stepwise linear regression procedure that tests which of the predictors contribute significantly an explanation of the variation in the response variables. Inclusion in the final model means that the predictor contributes significant unique variance to the model.

Table 2
Predicting Graduation of Special Education Students by Diploma in 1992-93

Disability Condition	Predictors Entering Stepwise Model	Bivariate Correlation	Model R^2
All	4th grade reading proficiency	.63	.59
	8th grade math proficiency	.46	
	Current expenditure per pupil	.25	
SLD	4th grade reading proficiency	.54	.54
	8th grade math proficiency	.36	
	Current expenditure per pupil	.27	
SED	Per pupil revenue	.47	.62
	4th grade reading proficiency	.58	
	Median household income (1990)	.49	
MR	Percent white	.52	.70
	All Education Expenditures per capita	-.22	
	Percent of households below poverty level (1992)	.03	
	% Revenue from state sources	.05	
	Population density	-.14	
	8th grade math proficiency	.28	

Table 3
Predicting Graduation of Special Education Students by Certificate in 1992-93

Disability Condition	Predictors Entering Stepwise Model	Bivariate Correlation	Model R^2
All	Community adult dropout rate	.50	.59
	Percent white	-.38	
	Population density	-.04	
	% Revenue from state sources	.00	
	Average teacher salary	-.26	
	Gross State Product per capita	-.07	
SLD	Percent of households below poverty level (1992)	.39	.15
SED	% Revenue from local sources	.25	.29
	Population density	-.11	
	Percent white	-.09	
MR	Community adult dropout rate	.59	.29

Two sets of predictive models explored the variation in the percent of special education students who graduated. Table 2 summarizes the findings for students graduating with a diploma and Table 3 for students graduating with a certificate. The Diploma models appear to consist largely of achievement, wealth, and expenditure variables and account for roughly three-fifths of the variation across states. The MR model should be interpreted with caution because the base rate for students with MR who receive a diploma is quite low. The models for predicting graduation by certificate are generally somewhat weaker, particularly for students with SLD and SED. The MR model is of some interest, accounting for slightly over one fourth of the variation in the rate of completion with a certificate. States that have higher adult dropout rates tend to have more MR students graduating with certificates.

Diploma models consist largely of achievement, wealth, and expenditure variables and account for roughly three-fifths of the variation across states.

Increasing Graduation Rates: Experiences of Three States

To complement our understanding of factors affecting school completion rates, three states were identified who have been relatively more successful in achieving a higher school completion rate for youth with disabilities. These states were selected on the basis of the most recent four year period for which data was available (school years 1989-90 through 1992-92). States chosen were those that demonstrated relatively high and stable percentages of students with disabilities who exited by means of a diploma or certificate. Table 4 summarizes demographic characteristics of the states.

State level special education personnel were interviewed in each selected state regarding experiences and initiatives to increase the graduation rate of students with disabilities. Respondents were asked about exit requirements for a regular diploma for youth with and without disabilities and about state initiatives intended to increase completion rates for youth with disabilities. All interview respondents described sustained leadership and a focus on school completion and preparedness for youth with disabilities. All three states were recipients of a state-wide transition systems change grant from the U.S. Office of Special Education Programs. None of the states had altered school completion requirements substantially in the last several years.

In one state, a literacy exam, in addition to specified course credits, is required for a standard diploma. In the other states, no competency test is required, however, in one case, state-wide assessments are administered for program planning purposes, and standards related to these assessments are under development, for possible application as a part of a voluntary system. In the third state, students demonstrate mastery of the state core curriculum through completion of specified courses. Students with disabilities may be given modifications in stimulus and response requirements to demonstrate mastery. A separate state wide assessment system (using the Stanford Achievement Tests and a separate measure for students with severe disabilities) is also administered.

Each selected state is implementing a number of initiatives related to school completion. In one case, the statewide transition systems change grant provides technical assistance in collaboration with vocational rehabilitation centers. Other initiatives include comprehensive career and vocational assessments of students in grades 9 and 10 and technical assistance in transition planning through a state supported project. A matrix is under development to help educators match academic and vocational competencies. Much of the impetus for this initiative can be traced to a comprehensive assessment of the needs of youth with disabilities completed in

Table 4
State Characteristics

Feature	State 1	State 2	State 3
Population Density	Middle	Middle	Low
Location	Mid-Atlantic	Northeast	West
Percent White Resident Population	Middle	High	High
Number of School Districts	141	283	40
Percent of Adults Who Dropped Out	24.9%	21.2%	14.9%

1994. New, and more rigorous, accreditation standards for all youth are under consideration and may impact graduation rates for youth with disabilities.

In the second state, a statewide transition systems change grant has been implemented for five years to provide training in student-centered and outcome-centered transition planning. In addition, a state initiative to increase graduation rates to 90% for all youth was implemented This initiative was linked to GOALS 2000, state legislation, and activities supported under the School to Work Opportunities Act and the transition planning component of IDEA. GOALS 2000 provided additional funds to support some of the related activities.

In the third state, a multi-year emphasis on increasing school completion rates began with a 1990 follow up study of normally achieving students and students with disabilities. Study results were used to shape several statewide initiatives. The state has implemented a five year transition systems change grant with an emphasis on life-span transition planning and student self-advocacy and participation. Regional coordinating councils were formed to develop capacity and to support liaison among local agencies (e.g., Job Training Partnership Act representatives, vocational rehabilitation). A School to Work Grant was also implemented to assist all students, including those with disabilities, to make a successful transition from school to a career. State department of education support for a staff person to support these efforts was provided. Initiatives for youth with disabilities were linked to better outcomes for all youth in a reorganization of several state agencies to serve all youth who are at risk for educational failure.

In each of the states, efforts are underway to "institutionalize" the functions that have been provided through the statewide transition systems change grants, to refine the use of information obtained from state wide assessments (e.g., as voluntary or compulsory standards), and where possible, to link school completion, preparedness, and transition initiatives for youth with disabilities to related initiatives for all youth.

Conclusions And Recommendations

The purpose of this brief was to provide a broader context within which to understand how students with disabilities complete school. The descriptive analyses of states' school completion rates for children with disabilities portray substantial variation across states and disability conditions. School completion rates, even at the descriptive level, are difficult to understand. Students may receive either a diploma or certificate when they complete school, and states' relative use of diplomas as compared to certificates varies considerably.

Different predictor variables accounted for state variations in rate of school completion by diploma versus certificate, and the predictor variables were better able to account for variation in rates of exit by diploma. Achievement variables (math or reading proficiency)

functioned as significant predictors of exit by diploma for all disabilities. Education expenditures were positively related to SLD diploma rates but inversely related to MR diploma rates. Community wealth (median income or poverty) also enters into the models for SED and MR. For exit by certificate, demographic variables entered strongly into the models, poverty was positively associated with SLD certificate rates and dropout rates with MR certificate rates. Population density and percent white were both inversely related to SED certificate rates, the strongest predictor in the SED model, however, was percent revenue from local sources. In sum, the predictors of rates for exit by diploma versus certificate are distinct and vary by disability category. These analyses suggest economic, demographic, and educational variables all influence school completion rates, but in distinct and complex ways. Additional research will be needed to better understand the factors influencing the two forms of school exit and to take into account the substantial variation across states in their relative use of diplomas versus certificates.

In sum, the predictors of rates for exit by diploma versus certificate are distinct and vary by disability category.

The addition of analyses of economic and demographic variables and the interviews with states relatively successful in achieving high school completion rates for youth with disabilities offers the possibility of a more comprehensive understanding. The findings suggest the following recommendations:

1) *Base reform and change initiatives on a Data Based Information Pool.* In each session of Congress, lobbyists complain about the data collection and reporting burdens experienced by state and local education agencies. At the same time, amendments to IDEA and other initiatives frequently increase data requirements although the data are rarely analyzed or used in a manner to inform Congressional, federal administrative, state or local reforms to improve educational services and outcomes for children with disabilities. Only the consistent systematic application of a data based information pool, comprised of a broad set of variables, will be sufficient to guide policy and practice. Each of the states interviewed for the study reported systematic and ongoing collection of student assessment and program information to plan, implement and evaluate initiatives for improving school completion.

2) *Refashion our visions of what makes special education special using emerging knowledge about relationships between economic, educational and demographic variables and disability issues.* Professional debate over what constitutes special education, for example, as provided in inclusive environments (Zigmond, 1995), may be expected to continue. The visions and expectations that are emerging to represent the "richest educational environments" (Pugach, 1995), that is, ones that promote success for students with disabilities, are best based on an understanding of the roles of economic, demographic and educational program variables. Substantial progress can be made in addressing issues of outcomes for children with disabilities by evolution in existing, promising models of special education settings, such as the PASS variable evaluation system (Scruggs & Mastropieri, 1995) which includes prioritized instruction, adapted instruction, effective teacher presentation, and systematic evaluation procedures. Systematic study of the efficacy of such a model when expanded to incorporate the influence of economic, cultural, and other program variables may be expected to yield powerful recommendations for improving school completion for children with disabilities. When combined with vigorous state leadership and linkages with broad based initiatives in education, school completion rates and preparedness for adult life roles for youth with disabilities may be expected to increase substantially.

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